BREVOORT ISLAND AREA

CARIBOU SURVEY

September - November 1978

Northwest Territories Resources, Wildlife & Economic Development

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CARIBOU SURVEY

September - November 1978

T. CHOWNS
N.W.T. WILDLIFE SERVICE
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ᐅᓂᒃ ᑲᓕᐊᔪᓕᕐᓗᒍ ᑐᖅᓴᓂᖅ

ᓯᕗᑦ ᐱᒻ 6, ᓄᐃᒪ < 29, 1979 ᑎᑭᑦ ᔪᒍ ᖃᓴᒋᕐᓂᐅᑦ ᑐᓂᒃ ᑐᓂ ᖃᓄᖅᑕᓕᐅᖅᑐᑦᓯᒪᔪᖅ ᖃᓄᖅᑕᒋᐊᕐᓗᒋᑦ. ᑕᑯᓕᐅᖅᑐᑦᔪᒍ 560ᓂᑦ ᑐᓂ ᑐᓂᑦ ᐊᒻᒪᓗ 69ᓂᑦ ᓄᑦ ᕿᖅᓂᑦ ᑕᑯᓕᐅᖅᑎᓕᒍᑦ. ᐅᖃᓕᓐᓇᐃ ᐊᒻᒪᓗ ᖃᓄᖅᑕᒋᐊᕐᓗᒋᑦ ᐅᐃᕐᖃᓴᓂᑦ ᐊᒻᒪᓗ ᖃᓄᖅᑕᒋᐊᕐᓗᒋᑎ ᑐᓂ ᑐᓂᑦ ᐊᑎᓕᐊᖏᑦ ᑐᓂᒃᑯᑦᑕᒋᐊᕐᓗᒋᑦ. ᑐᓂ ᑐᐃᑦ ᐊᑎᓕᐊᓕᓯᐅᖅᓕᕐᓂᑦ ᐋᖅᑭᒃᓴᓂ ᑕᒪᓂ ᓄᕐᐊᓂ ᐃᓄᖅᑭᑦᑕᐅᑦ ᑕᐃᔨᐅᕐᓗᑦ ᓕᓐᓄᑦ (Smith Channel) ᐊᒻᒪᓗ ᑕᓕᐅᑦ ᐊᑎᖓᖅᑐᑦ ᖃᒪᓂᖅᓯᐊᖅᑎᓗᒍ ᓂᒥᐊᓂᓗ ᑐᓂ ᑐᐃᑦ ᑕᑯᓂᖅᓯᓕᕐᓂᑦ ᓄᓇᓕᖕᓂᑦ (McKeand plateau) ᑕᒪᐅᖅ ᐋᖅᑭᐅᓂᖏᓐᓄᑦᑐᖅ ᐊᒻᒪᓗ ᓄᓇᒧᑦ ᐊᑎᐱᓂᖅᑐᓕᖅᑎᓯᒪᔪᑦ.

ᓕᓂ ᑕᒪᓂ ᑐᓂ ᑐᓂᑦ ᖃᐅᔨᓴᖅ ᑲᐱᓂᑎᐊᖃᖅᑐᑐᒍᑦ.

ABSTRACT

Aerial surveys of distribution and movements of caribou (Rangifer tarandus groenlandicus) were carried out from September 6 to November 29, 1979 in the Brevoort Island area of Baffin Island where a staging site for offshore drilling is to be constructed. Of the 560 caribou observed, 69 were calves and 80.2% were at elevations below the 60 m contour. Scattered, small groups occurred on Beekman Peninsula and Brevoort Island. Valleys at the head of Smith Channel and the valley descending south from Qamaniqjuaq Lake contained high concentrations of caribou. There was a fall migration from the McKeand Plateau to the valleys and lowlands of less than 60 m elevation. Further study is required to confirm the significance of these observations.

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INTRODUCTION

From September to November 1978, caribou (Rangifer tarandus groenlandicus) surveys were carried out in the Brevoort Island area of Hall Peninsula on Baffin Island (Fig. 1). Residents of Allen Island outpost camp (population 40) acted as observers as they have a vested interest in the resources of the area. Also, the abandoned D.E.W. line site on Brevoort Island which is to be used as a staging site for the drilling activity, is only about 45 km from the camp.

Previous attempts to estimate the total population of caribou on Baffin Island are inconclusive. Since 1974, a different approach which treated the Baffin Island caribou population as separate units, north and south of the 70th parallel was taken. Subsequently the largest herd with the greatest migration received the most attention, while the smaller satellite populations on Foxe, Meta Incognita and Hall Peninsulas were poorly documented.

As the Hall Peninsula herd has never been studied, our objectives were to gather information on the distribution of caribou in the Brevoort area, monitor movements, and use that information to outline critical habitat. Knowledge of total numbers is necessary for management, and this study is intended to provide enough information on distribution to facilitate design of future surveys.

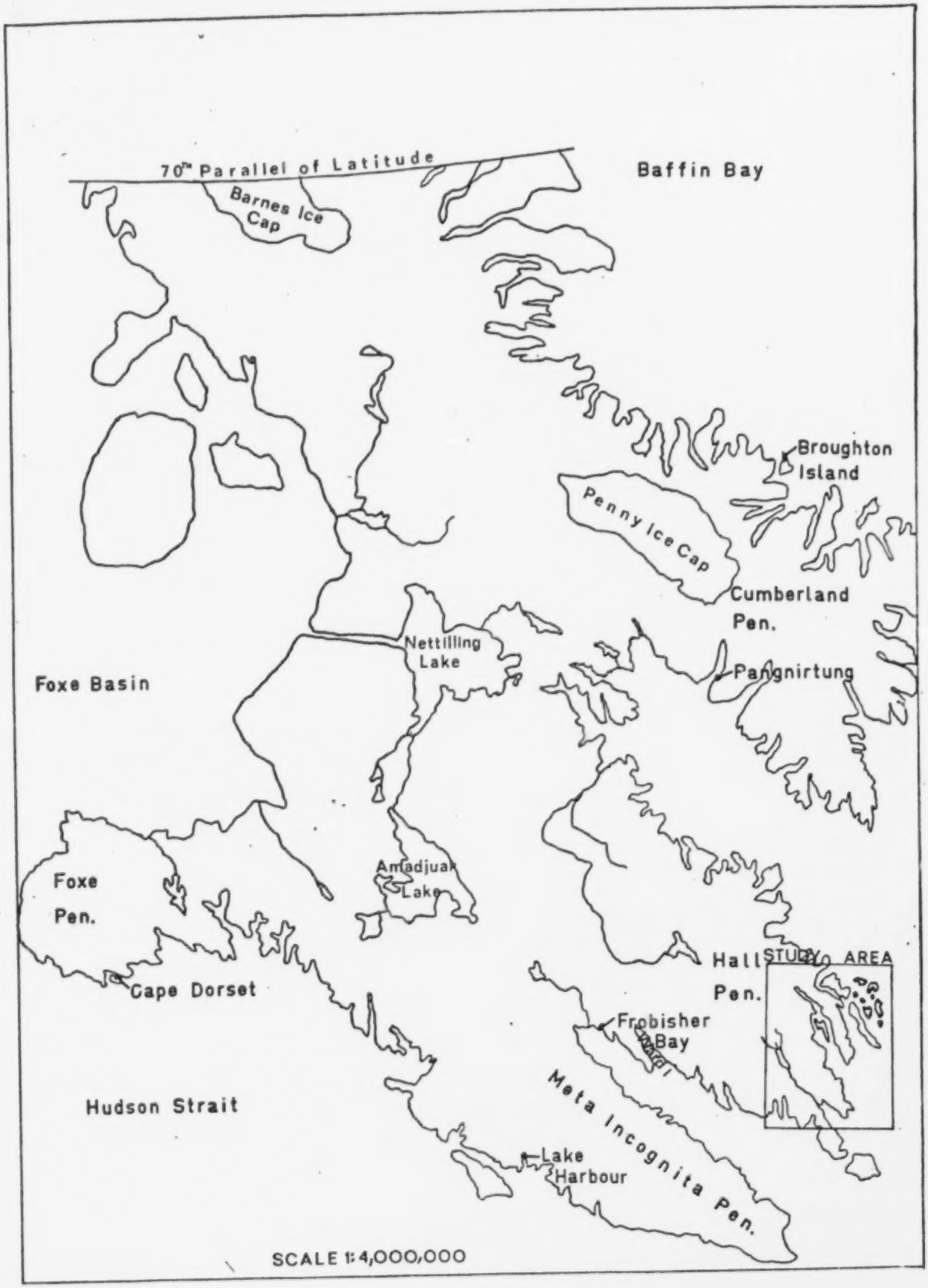

Figure 1. South Baffin Island showing the study area of the 1978 caribou survey.

METHODS

Four surveys were carried out from September 6 to November 29 in a Twin Otter aircraft flying at an approximate altitude of 120 m and a ground speed of 170 km/hr.

The left and right observers, both from Allen Island, recorded on 1:250,000 scale maps, numbers of adult caribou and calves. Tracks were recorded to show presence of caribou and direction of movement.

Flight lines were designed to give coverage where caribou were likely to be found. No systematic transects were flown. To record caribou and tracks seen between the study area and Frobisher Bay we maintained the 120 m altitude while flying between those points.

RESULTS

September 6

We began our survey on September 6 (Fig. 2). Visibility was good throughout the day. From Frobisher Bay to Allen Island, four caribou were observed on the McKeand Plateau. Snow was present at elevations above 600 m. Beekman Peninsula, Brevoort Island, and the Lemieux Islands were virtually snow free, and the caribou were difficult to spot. During this survey 23 caribou, including three calves, were seen on Beckman Peninsula, on Brevoort Island and an unnamed island north of Brevoort. No caribou were seen on the outer Lemieux Islands which have sparse vegetation.

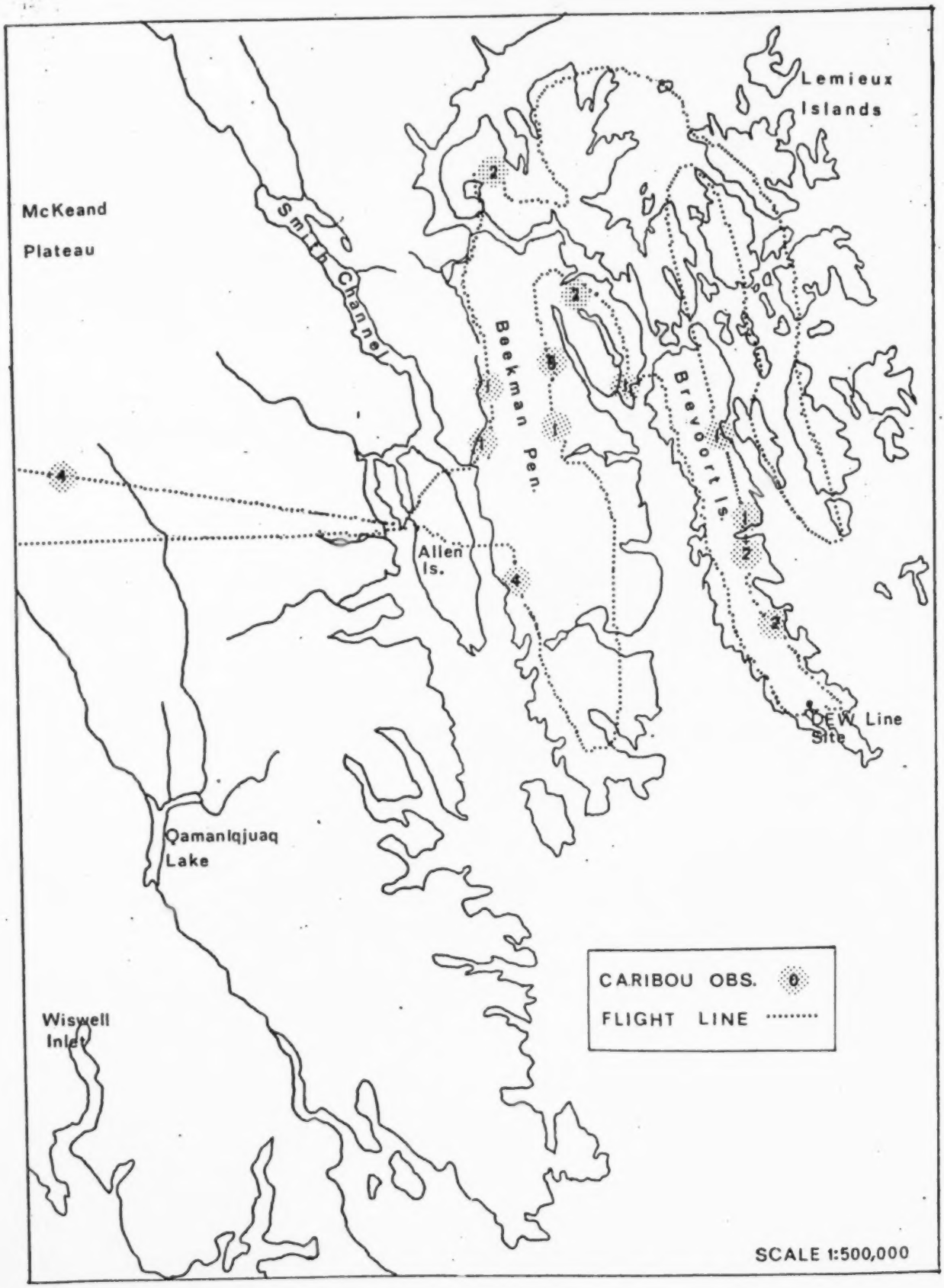

Figure 2. September 6 survey.

October 16

Figure 3 shows the October 16 survey route. Visibility remained good for that survey. On the McKeand Plateau, which was 100% snow covered following a blizzard, no caribou were seen but between 200 and 300 sets of tracks with a general north-south orientation showed clearly in the fresh snow. Beekman Peninsula, Brevoort Island, and the Lemieux Islands which have more irregular topography were about 75% snow covered. We counted 67 caribou including 13 calves on Beekman Peninsula and Brevoort Island. Tracks showed well in those areas also. In the valleys at the north end of Smith Channel, three wolves and 243 caribou including 24 calves were counted. No caribou or tracks were spotted on the Lemieux Islands. On the return to Frobisher Bay, between 300 and 400 sets of tracks, again with a general north-south orientation, were seen on the plateau, but only one caribou was noted. It was not possible to be precise about direction or number of tracks on the plateau because of extensive cratering.

November 11

On the flight from Frobisher Bay to Allen Island (Fig. 4), we saw caribou tracks around Ward Inlet. On the McKeand Plateau, there was drifting snow and no evidence of caribou but on Beekman Peninsula and Brevoort Island, winds were calm and tracks were still abundant. A total of 54 caribou including six calves were seen in those areas. The outer Lemieux Islands were not included in this survey because they seemed devoid of caribou and the north end of Smith Channel was not surveyed because of turbulence. The west side of Smith Channel is rugged and no caribou were seen there. In the

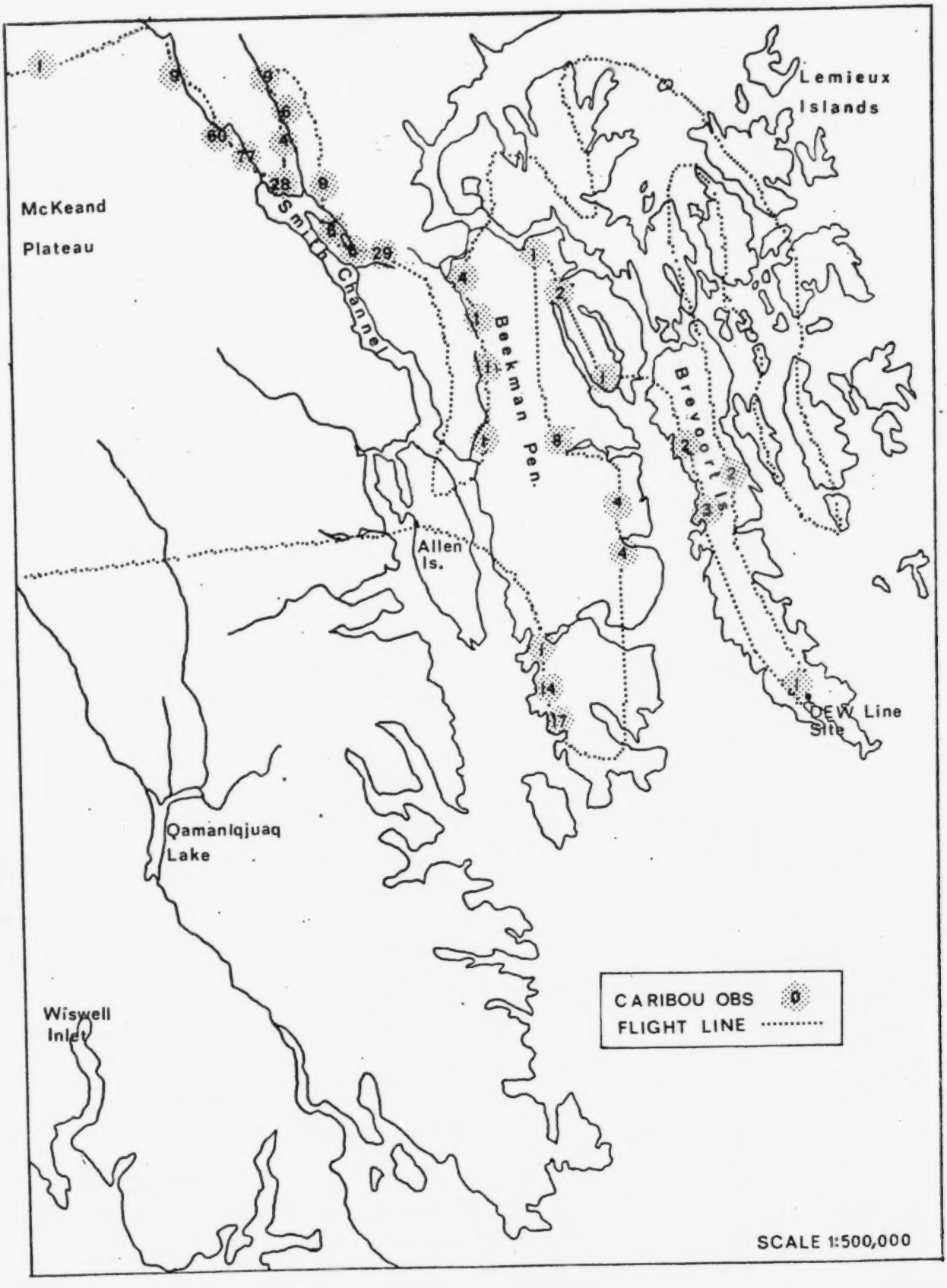

Figure 3. October 16 survey.

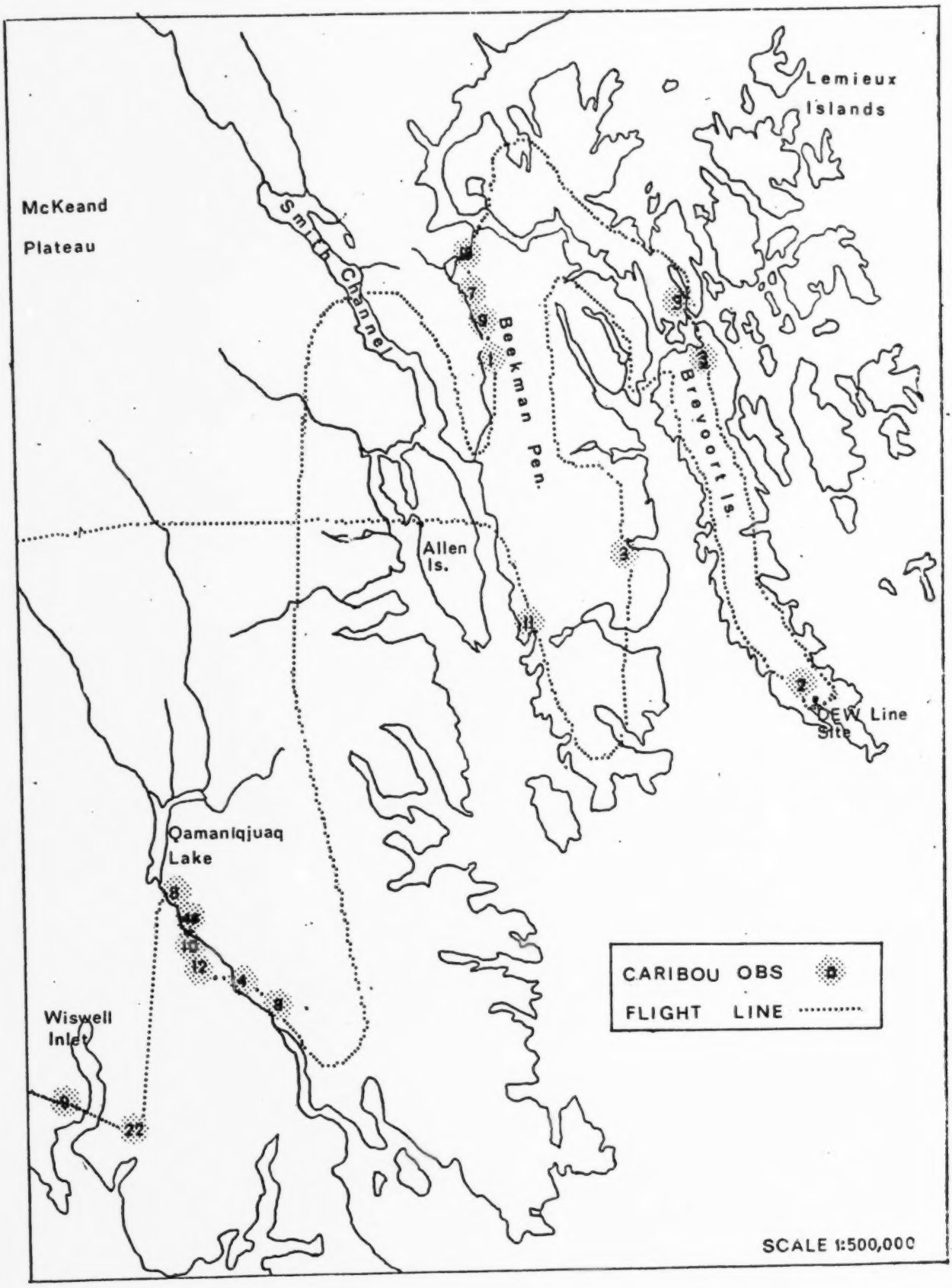

Figure 4. November 11 survey.

valley descending south from Qamaniqjuaq Lake, 88 caribou including 16 calves were counted and at Wiswell Inlet, we saw 31 caribou with two calves.

November 29

Figure 5 shows our route on November 29. There were tracks around Ward Inlet but no evidence of caribou on the McKeand Plateau where there was some drifting snow. An ice bridge was forming at the north end of Brevoort Island. Visibility was good but turbulence prevented us from flying into the head of Smith Channel or the Qamaniqjuaq valley. Forty-five caribou including four calves were seen on Brevoort Island and Beekman Peninsula.

During the 4 survey days, sightings of 559 caribou, including 69 calves, were recorded (Table 1). Table 2 shows the distribution of these animals in relation to the relief. Eighty-two percent of the caribou were found below 60 m elevations. Approximately 35% of the land surveyed is below 60 m in elevation.

DISCUSSION

At the time of the survey, a herd of at least a dozen caribou occupied Brevoort Island. Although the number observed differed with each flight, it is doubtful that any emigration or immigration occurred while there was open water. We could not tell from the survey whether caribou are occasional visitors to Brevoort Island or if they are resident there.

The Lemieux Islands northeast of Brevoort where no evidence of caribou was found may not be important to the caribou population of this area because of sparse vegetation.

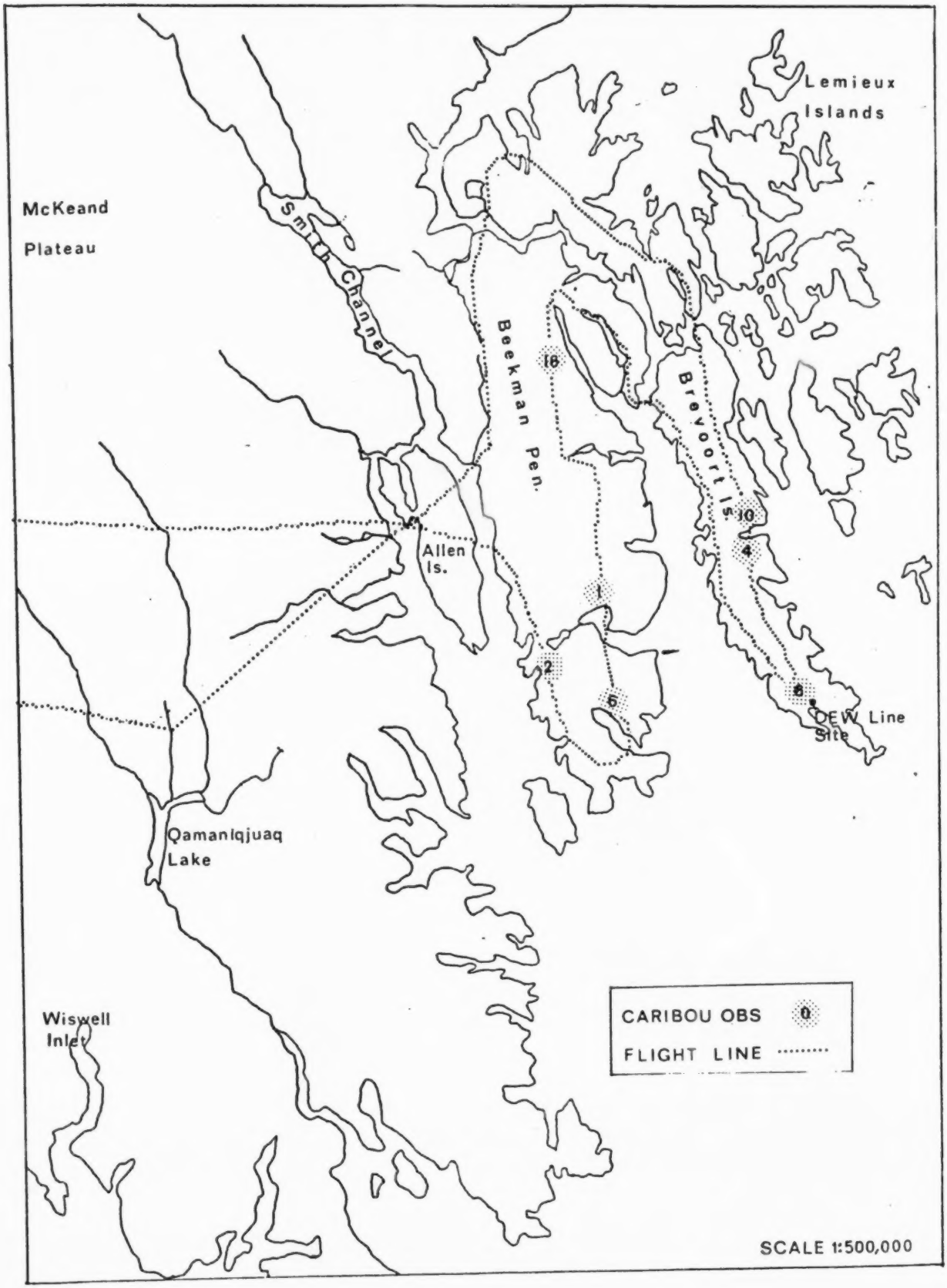

Figure 5. November 29 survey.

Table 1. Aerial survey observations of Brevoort Island caribou Sept. - Nov. 1978.

Location	September 6		October 16		November 11		November 29	
	Calves	Total	Calves	Total	Calves	Total	Calves	Total
Outer Lemieux Islands	0	0	0	0	-	-	-	-
Island n. of Brevoort	0	2	0	0	1	3	0	0
Brevoort Island	0	6	1	8	0	5	1	20
Beekman Peninsula	3	15	12	59	6	49	3	25
Smith Channel	-	-	24	243	-	-	-	-
McKeand Plateau	0	4	0	1	0	0	0	0
Qamanaqjuaq Lake	-	-	-	-	16	88	-	-
Wiswell Inlet	-	-	-	-	2	31		-
Total	3	27	37	311	25	176	4	45

Table 2. Distribution of caribou in relation to relief Sept. - Nov. 1978.

Location	September 6		October 16		November 11		November 29	
	<60 m	>60 m	<60 m	>60 m	<60 m	>60 m	<60 m	>60 m
Outer Lemieux Island	0	0	0	0	-	-	-	-
Island n. of Brevoort	2	0	0	0	0	3	0	0
Brevoort Island	0	6	3	5	0	5	10	10
Beekman Peninsula	9	6	32	27	37	12	2	23
Smith Channel	-	-	243	0	-	-	-	-
McKeand Plateau	0	4	0	1	0	0	0	0
Qaminaqjuaq Lake	-	-	-	-	88	0	-	-
Wiswell Lake	-	-	-	-	31	0	-	-
Total	11	16	278	33	156	20	12	33

There is evidence of a fall migration from the McKeand Plateau to the valleys and lowlands of less than 60 m elevation. Observations of caribou with calves were recorded during the 1978 calving season on the highlands around Allen Island. Elliott (1972) observed that caribou in central Baffin moved to highlands to calve, possibly to avoid predators. He also denoted a concentration of cows with calves on the McKeand Plateau. Kelsall (1968) noted that caribou took advantage of the wind to escape insect harrassment. Many caribou may remain on the McKeand Plateau all summer where cool temperatures and winds would provide relief from insects.

In October, one caribou and a multitude of tracks oriented north-south, were spotted in fresh snow a few days after a blizzard. Elliott (1972) had noticed that the 1966 and 1967 fall migrations from central Baffin coincided with the arrival of permanent snow cover, and seemed to be initiated by weather systems which produced blizzards. Pruitt (1959) also described the major influence of snow on the movements of caribou, noting that they tended to travel from areas of high to low snow density and from greater to lesser snow depths to find food. High concentrations of caribou occurred in the valleys at the head of Smith Channel and the Qamaniqjuaq Valley.

During the survey, it became apparent that the Brevoort area was only the edge of a range and that the entire range must be studied for a more complete understanding of critical habitat, movements and population parameters.

To determine calving areas, June surveys of the Hall Peninsula are required.

To obtain a total population estimate, it is recommended that an aerial survey be carried out during the fall in areas of less than 300 m in elevation, when the animals, without full winter pelage, contrast well with the snow.

ACKNOWLEDGEMENTS

We thank the residents of the Allen Island Outpost Camp who participated in the survey. They are Akeeshoo Nowdlak, Tommy Inookee, Lucassie Nowdlak, Jacobie Adams, Peter Nowdlak, Simeonie Lucassie, Pauloosie Adamie and Pauloosie Lucassie.

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